

## CLAIMS

What is claimed is:

1. An agonist anti-trkC antibody comprising a heavy chain CDRs comprising:

(a) a CDR1 of the formula GYTFTSYXaaXaaH (SEQ ID NO:16), wherein Xaa at position 8 is R or W, and Xaa at position 9 is I, L, R, or M;

(b) a CDR2 of the formula EIYPSNXaaRTNYNEKFXaaS (SEQ ID NO:17), wherein Xaa at position 7 is A, T, S, or G; and Xaa at position 16 is K or E; and

(c) a CDR3 of the formula KYYYGNXaaXaaRSWYFDV (SEQ ID NO:18), wherein Xaa at position 7 is T or S; wherein Xaa at position 8 is R, Q, K, S, or Y;

wherein the agonist anti-trkC antibody is not an antibody comprising a heavy chain CDRs comprising a CDR1 region of SEQ ID NO:22, a CDR2 region of SEQ ID NO:23, and a CDR3 region of SEQ ID NO:24.

2. The agonist anti-trkC antibody of claim 1, wherein the agonist anti-trkC antibody further comprises a light chain variable region.

3. An agonist anti-trkC antibody comprising a light chain CDRs comprising:

(a) a CDR1 of the formula RASESXaaDXaaYGISFXaaXaa (SEQ ID NO:19), wherein Xaa at position 6 is I or V; Xaa at position 8 is N or S; Xaa at position 14 is L or M; Xaa at position 15 is A, T, or N;

(b) a CDR2 of the formula AASNXaaGS (SEQ ID NO:20), wherein Xaa at position 5 is R, L, or Q; and

(c) a CDR3 of the formula QQSKXaaVPRT (SEQ ID NO:21), wherein Xaa at position 5 is T, A, S, or E;

wherein the agonist anti-trkC antibody is not an antibody comprising a light chain CDRs comprising a CDR1 region of SEQ ID NO:25, a CDR2 region of SEQ ID NO:26, and a CDR3 region of SEQ ID NO:27.

4. The agonist anti-trkC antibody of claim 1, wherein the agonist anti-trkC antibody further comprises a heavy chain variable region.

5. An agonist anti-trkC antibody comprising:

(a) a heavy chain CDRs comprising:

(i) a CDR1 of the formula GYTFTSYXaaXaaH (SEQ ID NO:16), wherein Xaa at position 8 is R or W, and Xaa at position 9 is I, L, R, or M;

(ii) a CDR2 of the formula EIYPSNXaaRTNYNEKFXaaS (SEQ ID NO:17), wherein Xaa at position 7 is A, T, S, or G; and Xaa at position 16 is K or E; and

(iii) a CDR3 of the formula KYYYGNXaaXaaRSWYFDV (SEQ ID NO:18), wherein Xaa at position 7 is T or S; wherein Xaa at position 8 is R, Q, K, S, or Y; and

(b) a light chain CDRs comprising:

(i) a CDR1 of the formula RASESXaaDXaaYGISFXaaXaa (SEQ ID NO:19), wherein Xaa at position 6 is I or V; Xaa at position 8 is N or S; Xaa at position 14 is L or M; Xaa at position 15 is A, T, or N;

(ii) a CDR2 of the formula AASNXXaaGS (SEQ ID NO:20), wherein Xaa at position 5 is R, L, or Q; and

(iii) a CDR 3 of the formula QQSKXaaVPRT (SEQ ID NO:21), wherein Xaa at position 5 is T, A, S, or E;

wherein the agonist anti-trkC antibody is not an antibody comprising (a) a heavy chain CDRs comprising a CDR1 region of SEQ ID NO:22, a CDR2 region of SEQ ID NO:23, and a CDR3 region of SEQ ID NO:24; and (b) a light chain CDRs comprising a CDR1 region of SEQ ID NO:25, a CDR2 region of SEQ ID NO:26, and a CDR3 region of SEQ ID NO:27.

6. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody binds human trkC.

7. The agonist anti-trkC antibody of claim 6, wherein the agonist anti-trkC antibody binds to human trkC with a  $K_D$  less than about 5 nM.

8. The agonist anti-trkC antibody of claim 6, wherein the agonist anti-trkC antibody further binds rodent trkC.

9. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody is a monoclonal antibody.

10. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody is a humanized antibody.

11. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody comprises a heavy chain variable region comprising:

- (a) a CDR1 region of SEQ ID NO:4;
- (b) a CDR2 region of SEQ ID NO:5; and
- (c) a CDR3 region of SEQ ID NO:6.

12. The agonist anti-trkC antibody of claim 11, wherein the heavy chain variable region consists of the sequence of SEQ ID NO:1.

13. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody comprises a light chain variable region comprising:

- (a) a CDR1 region of SEQ ID NO:7;
- (b) a CDR2 region of SEQ ID NO:8; and
- (c) a CDR3 region of SEQ ID NO:9.

14. The agonist anti-trkC antibody of claim 13, wherein the light chain variable region consists of the sequence of SEQ ID NO:2.

15. The agonist anti-trkC antibody of any of claims 1-5, wherein the agonist anti-trkC antibody comprises

- (a) a heavy chain variable region comprising:

- (i) a CDR1 region of SEQ ID NO:4;
- (ii) a CDR2 region of SEQ ID NO:5; and
- (iii) a CDR3 region of SEQ ID NO:6; and
- (b) a light chain variable region comprising:
  - (i) a CDR1 region of SEQ ID NO:7;
  - (b) a CDR2 region of SEQ ID NO:8; and
  - (c) a CDR3 region of SEQ ID NO:9.

16. The agonist anti-trkC antibody of claim 15, wherein the heavy chain variable region consists of SEQ ID NO:1, and the light chain variable region consists of the sequence of SEQ ID NO:2.

17. The agonist anti-trkC antibody of claim 15, wherein the heavy chain consists of the sequence of SEQ ID NO:28, and the light chain variable region consists of the sequence of SEQ ID NO:29.

18. A nucleic acid encoding an agonist anti-trkC antibody of any of claims 1-17.

19. The nucleic acid of claim 18, wherein the nucleic acid comprises the sequence of SEQ ID NO:12 encoding the heavy chain variable region of the agonist anti-trkC antibody, and the sequence of SEQ ID NO:10 encoding the light chain variable region of the agonist anti-trkC antibody.

20. The nucleic acid of claim 19, wherein the nucleic acid comprises the sequence of SEQ ID NO:13 encoding the heavy chain of the agonist anti-trkC antibody, and the sequence of SEQ ID NO:11 encoding the light chain variable region of the agonist anti-trkC antibody.

21. A vector comprising the nucleic acid of claim 18.

22. A host cell comprising the nucleic acid of claim 18.

23. A pharmaceutical composition comprising (a) an effective amount of the agonist anti-trkC antibody of any of claims 1-17 and (b) a pharmaceutical acceptable excipient.

24. A kit comprising the agonist anti-trkC antibody of any of claims 1-17.

25. A method of making an agonist anti-trkC antibody, said method comprising expressing a polynucleotide encoding the agonist anti-trkC antibody of any of claims 1-17 in a host cell.

26. A polypeptide that binds to trkC, comprising:

(a) a CDR1 of the formula GYTFTSYXaaXaaH (SEQ ID NO:16), wherein Xaa at position 8 is R or W, and Xaa at position 9 is I, L, R, or M;

(b) a CDR2 of the formula EIYPSNXaaRTNYNEKFXaaS (SEQ ID NO:17), wherein Xaa at position 7 is A, T, S, or G; and Xaa at position 16 is K or E; and

(c) a CDR3 of the formula KYYYGNXaaXaaRSWYFDV (SEQ ID NO:18), wherein Xaa at position 7 is T or S; wherein Xaa at position 8 is R, Q, K, S, or Y;

wherein the polypeptide is not a polypeptide comprising CDRs comprising a CDR1 region of SEQ ID NO:22, a CDR2 region of SEQ ID NO:23, and a CDR3 region of SEQ ID NO:24.

27. A polypeptide that binds to trkC, comprising:

(a) a CDR1 of the formula RASESXaaDXaaYGISFXaaXaa (SEQ ID NO:19), wherein Xaa at position 6 is I or V; Xaa at position 8 is N or S; Xaa at position 14 is L or M; Xaa at position 15 is A, T, or N;

(b) a CDR2 of the formula AASNXaaGS (SEQ ID NO:20), wherein Xaa at position 5 is R, L, or Q; and

(c) a CDR3 of the formula QQSKXaaVPRT (SEQ ID NO:21), wherein Xaa at position 5 is T, A, S, or E;

wherein the polypeptide is not a polypeptide comprising CDRs comprising a CDR1 region of SEQ ID NO:25, a CDR2 region of SEQ ID NO:26, and a CDR3 region of SEQ ID NO:27.